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NATO CENTRAL REGION FORWARD DEFENSE: CORRECTING THE STRATEGY/FO--ETC(U)  
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# **NATO Central Region Forward Defense:**

## **Correcting the Strategy/ Force Mismatch**

**Waldo D. Freeman, Jr.**

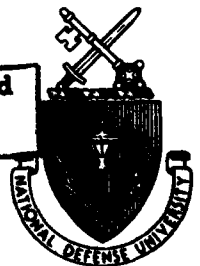
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NATO CENTRAL REGION FORWARD DEFENSE:

Correcting the Strategy/Force Mismatch

by

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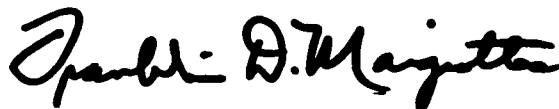


## FOREWORD

To complete our 1981 series of National Security Affairs Issue Papers, we are pleased to publish this National War College (NWC) research study, which reflects the increasing emphasis in the National War College curriculum on research and thinking on military strategy.

Lieutenant Colonel Waldo D. Freeman, USA, addresses the NATO strategy of forward defense and flexible response. Adopted in 1967, this strategy is based on three interdependent components of military power for the defense of Europe--conventional, theater nuclear, and strategic. Colonel Freeman argues that the strategy is not credible because NATO conventional forces are inadequate to achieve the objective of limiting damage and holding territory in the NATO Central Region. Aware that Europeans have been unwilling to invest in a full conventional capability, the author suggests options that might provide the needed capability at a price NATO nations can afford and should be willing to pay, and that should not threaten the Warsaw Pact.

We are daily reminded of the increasing concern of Europeans with the mode of defense of their homelands. Enhancing the conventional warfighting capability of NATO forces through the means outlined by Colonel Freeman might assist in allaying European concerns about nuclear armaments on their soil. It is a special privilege for the National Defense University Press to add this NWC thinking to our Issue Paper Series, which was developed to provide another vehicle for transmitting the results of NDU research to the national security affairs community.



FRANKLIN D. MARGIOTTA  
Colonel, USAF  
Director of Research

## ABOUT THE AUTHOR

Lieutenant Colonel Freeman wrote this paper while he was a student at the National War College and an adjunct fellow in the Research Directorate of the National Defense University. Before joining the University he was a Politico-Military Planner, Plans and Policy Directorate (J-5), Organization of the Joint Chiefs of Staff. He has also served as Commander, 2d Battalion, Ft. Dix; as Instructor/Assistant Professor, US Military Academy; as Battalion Commander, 2d Infantry Division, South Korea; and as District Senior Advisor, Military Assistance Command, South Vietnam. Colonel Freeman is a graduate of the US Military Academy and received a master's degree in international relations from Johns Hopkins University. He is currently serving as Special Assistant to the Chief of Staff, Headquarters SHAPE.

## EXECUTIVE SUMMARY

✓  
This research paper addresses NATO Central Region conventional inferiority and its implications for strategy. It argues that alternative solutions must be found, since the cost of closing the force balance gap with the 11-1/2 armored-division equivalents needed for forward defense is probably greater than Western democracies are willing to bear. Four solutions are examined: 1) increased precision-guided munitions densities; 2) force structure modifications; 3) peacetime construction of fortifications, barriers, and obstacles; and 4) defensive use of urban areas. The author concludes that a credible conventional forward defense is possible within current resource and manpower constraints if NATO makes major adjustments to its force posture, doctrine, and plans, incorporating features of the four examined areas of improvement.  
↑

## NATO CENTRAL REGION FORWARD DEFENSE Correcting the Strategy/Force Mismatch

### THE STRATEGY/FORCE MISMATCH

NATO's conventional inferiority in the Central Region has been a generally accepted fact for over 30 years, but the operational result of this fact has been widely debated. During the course of the debate, official NATO strategy has taken three forms with planned conventional force levels serving as the key variable. Always at issue were two related questions: 1) whether a conventional defense was feasible given the size of Soviet and later Pact forces and the politically unbearable cost of matching them; or 2) was a conventional defense necessary, since Western nuclear superiority offered a convenient and cheap substitute. To bridge the gap the three strategies have linked fielded conventional forces to the threat of nuclear escalation (i.e., first use). Fortunately, the escalation threat has been credible enough to deter Soviet aggression for over 3 decades. During most of this period, Western nuclear superiority made the costs of miscalculation in a test of wills clearly disadvantageous to Moscow.

Current NATO strategy calls for forward defense and flexible response. In the Central Region this translates to defending and holding at the intra-German/Czechoslovakian border and repelling Pact forces by whatever means—conventional or nuclear—NATO commanders and governments find appropriate. When adopted in 1967, the clearly stated threat of escalation was probably still credible. Today, in view of Soviet parity in both strategic and tactical nuclear weapons, the advantage of escalation (if it ever really existed) is no longer arguably with the West. Moreover, once begun, escalation by the West could not necessarily be controlled according to deterrence theory. In addition to this, the incalculable costs of uncontrolled escalation to the strategic level appear to many to outweigh the cost of losing a conventional war in the Central Region. Accordingly, NATO's threat of escalation in the face of conventional defeat is far less credible now than in 1967 and may be insufficient to deter future Soviet conventional probes.

Nevertheless, NATO continues to cling to a seemingly incredible strategy, since no alternative appears politically acceptable. But the fault lies not with the flexible response strategy, which has always included the purely conventional defense option, but with NATO nations' unwillingness to field the forces called for in NATO force plans to make this option

feasible. With adequate conventional forces the credibility of flexible response would be restored, since fielded NATO forces at each level of the triad would deter or fight counterpart forces on the other side. NATO/Pact parity at conventional, theater nuclear, and strategic nuclear levels would create stability, enhance deterrence, and improve conditions for arms control, since no gain could be achieved by either side through aggression and/or escalation.<sup>1</sup> "It should be remembered that deterrence in land warfare has always been and remains an effort of good defense capabilities and not a substitute for them."<sup>2</sup>

The current state of NATO conventional defenses is indicated by the following:

- o NATO cannot have a high confidence of sustaining a forward defense on this front (Center Region) without early resort to tactical nuclear weapons. General Jones, CJCS <sup>3</sup>
- o Soviet strategists may now be persuaded 'that a two-day march to the Rhine is militarily feasible and could be undertaken without undue risk of a strategic or tactical nuclear riposte from NATO.' Senator Nunn <sup>4</sup>
- o NATO's current force appears too small to ensure the success of the conventional defense, suggesting an early resort to nuclear weapons. Congressional Budget Office <sup>5</sup>
- o With its numerical advantage the Pact can launch a large attack on relatively short notice. While a bolt-out-of-the blue attack is not likely, the Pact is capable of mounting a moderate attack with only a few days of mobilization and a larger assault 15 days after mobilization. A numerical superiority of 2:1 while certainly not ensuring ultimate victory could be decisive in determining the outcome of the early battles. This numerical advantage also enables the Pact to concentrate massive forces at key points along NATO's defensive lines. Such

concentration of forces, with enormous firepower of combined arms, could enable the Pact to gain breakthroughs that, if unchecked, would permit further rapid advances into NATO territory along multiple axes. Harold Brown, Secretary of Defense <sup>6</sup>

Estimates vary widely as to the NATO land-force increase required to make conventional defense in the Central Region feasible. A recent conservative Congressional Budget Office analysis concluded that 6 additional armored-division equivalents (ADE) are required for conducting an elastic defense, while 11-1/2 are needed for a steadfast (forward) defense.<sup>7</sup>

Stronger conventional forces are required not only to enhance flexible response but also to make NATO truly capable of executing the flipside of its strategy--forward defense. Generals (including Germans) probably would prefer to fight a mobile battle against the Soviets thereby minimizing NATO military casualties by trading space for time and by taking advantage of assumed superior Western flexibility and generalship. However, only a strong forward defense at the intra-German/Czechoslovakian border is politically acceptable to Germany. The German position has been made clear in successive White Papers.

An essential element of NATO's strategy is the principle of forward defense. Forward defense is defined as a coherent defense conducted close to the intra-German border with the aim of losing as little ground as possible and confining damage to a minimum. This includes the recapture of lost territory.

For the Federal Republic of Germany there can be no alternative to forward defense: in view of her geostrategic situation, her population density near the border to the Warsaw Pact, and the structure of her economy, any conceptual model of defense involving the surrender of territory is unacceptable. Thirty percent of the population live in a 100 kilometer-wide zone this side of the intra-German

border, and twenty-five percent of our industrial capacity is located in that zone. These geographic circumstances rule out any defensive operations conducted flexibly in the depths of the area and accepting the loss of territory.<sup>8</sup>

The logic of forward defense is compelling. A successful forward defense would limit conventional damage to NATO territory, and lower the likelihood of Soviet first use of tactical nuclear weapons since that would trigger counterstrikes on Pact territory. Successful forward defense would also eliminate the need for even larger NATO forces to recapture lost territory, gain time to negotiate an end to the conflict without allowing Pact gains, and avoid the possible political paralysis that would attend rapid Pact advances through Western Europe. Further, it would provide the battlefield depth necessary to contain potential individual Pact breakthroughs, well forward in contradistinction with a strategy calling for broad withdrawals and delays over much of West Germany. Finally, if capable of the foregoing, it could certainly prevent limited terrain seizures or "salami" tactics. Thus, if NATO's war aims are to maintain the status quo by holding territory, while simultaneously limiting destruction in Europe, a conventional forward defense offers a much better chance of securing Western objectives than either rapid escalation to use of tactical nuclear weapons or a more mobile conventional defense. The reason for this is there appears little chance of avoiding defeat if a significant amount of territory is lost at the outset.<sup>9</sup>

Despite the logic, however, West European policymakers have espoused the forward strategy while permitting their conventional capabilities to fall short of minimum required levels. They have preferred to live with, rather than grapple with, the widespread public aversion to preparation for war in depth. The Germans, for example, during the mid-60's attempted to have it both ways by insisting on forward defense, avoidance of destruction of German territory, and restoration of a credible deterrent while also requiring that the cost and manpower requirements be moderate.<sup>10</sup> The result after 15 years of political debate is a deployed NATO conventional force with doubtful capacity to carry out either dimension of the agreed strategy.

Cost alone may continue to prevent the force increase needed despite the compelling case for it today. Extrapolating

from estimates of 8-year costs for 2 fully supported US Armored Divisions, 11 approximately \$107 billion ('82 dollars) is required to field the 11-1/2 additional NATO ADE's cited earlier. This is nearly twice the combined 1981 defense budgets of the UK, FRG, Belgium, and the Netherlands, and is more than half the US figure. With countless competing resource demands, expenditures of this magnitude are unlikely, particularly coming on the heels of successive increases for the Long Term Defense Program. These resource limitations, combined with the clear strategic necessity, forces the strategist to search for vastly cheaper and less orthodox alternatives which may offer some hope for bridging the force structure/strategy gap. Four areas appear to offer considerable promise in this regard--precision-guided munitions (PGM), force structure changes, increased preparation of and planning for the use of fortifications, barriers, and obstacles, and defensive use of urban areas.

#### PRECISION-GUIDED MUNITIONS

Evolutionary advances in technology provide one alternative to the strategy dilemma. These advances include not only target acquisition and marking but also munition guidance, accuracy, and lethality, as well as decreases in both the size and the relative cost of incorporating these features into weapons systems. New systems, some of which are already fielded (e.g., TOW, Copperhead, Maverick, Stinger), provide major improvements in anti-armor and anti-air capabilities. Since Soviet offensive doctrine is based primarily on massed-tank attacks on narrow frontages to achieve rapid breakthroughs, the potential for saturation of the defensive zone with cheap, light, highly lethal anti-tank weapons may have tipped the offense-defense balance in the Central Region in favor of the defender. The infantryman's array of precision-guided munitions (PGM) has the potential to dominate today's battlefield, particularly high-value targets (tanks, armored personnel carriers, and aircraft), in exactly the same way that the machine gun dominated the Western trenches in the First World War. The Israeli problem with unsophisticated Egyptian PGMs (Sagger) in the '73 War is often cited as the first evidence of this shift in the balance.

The implications of large numbers of PGMs on the battlefield are indeed profound for the nature of future land warfare. Since the probability of killing a target is already as high as .81<sup>2</sup> with today's fielded PGMs (next generation

weapons are almost certain to be higher<sup>13</sup>), and since the ranges extend nearly as far as targets can be identified with the naked eye, seeing a target can usually lead to its destruction. Accordingly, it will be increasingly undesirable (not cost effective) to concentrate high value in one vehicle which can be readily destroyed by a relatively cheap system. The cost trends in both cases tend to widen this gap. By definition the attacker must expose high-value targets in order to succeed, while the defender can hide while directing fire on each target he can see. Thus, small groups of defenders have the potential to destroy large numbers of attacking vehicles.

The Soviets recognize this potential. "What seems to bother Soviet writers about anti-tank weapons is less their specific technological characteristics than the growing density of their deployment. The Soviet Union has long held that density--the ratio of force to space--is the key variable influencing the rate of advance."<sup>14</sup> PGM deployment density, however, is not limited by the number of forward-deployed, ground-based direct-fire systems in a potential Soviet breakthrough sector. Artillery and aircraft-delivered, terminally guided anti-tank projectiles, as well as mines, can be concentrated rapidly if a large target concentration appears on the battlefield. Maneuver of firepower rather than large ground forces will normally be the more effective solution to a mass attack since firepower is far quicker in engaging exposed targets and does not require exposure of large numbers of defensive targets to the attacker. Additionally, lightweight direct-fire PGMs (unlike tanks) are air-transportable in large numbers and may be moved rapidly to shore up threatened sectors.

Tank-based mass attack doctrine is therefore faced with a paradox. For rapid breakthroughs, speed is essential and Soviet planners expect to move 30 km per day initially and even more rapidly thereafter. Yet, speed reduces the attacker's ability to identify and engage defensive targets and requires use of high-speed routes. Both of these aid the defender, provided he reacts properly. While rapid advance on high-speed routes can reduce tank exposure to PGMs somewhat, it simplifies the defensive problem and allows concentration of forces along those same avenues, thus countering the Soviet advantage. A much slower advance, taking full advantage of poor visibility, smoke, terrain, and suppressive fire is more likely to reduce exposure to anti-tank fire. A slow, methodical advance, however, does not lead to the quick win required by Soviet force structure and doctrine. PGMs may simply have made both outdated.<sup>15</sup>

Like all new systems, PGMs have limitations. In the Central Region their potential is reduced by limited surface visibility, low ceilings, potential Pact countertactics, and night (up to 16 hours in winter) advances. Also, large numbers are required to cover all potential high-speed routes and to cope with the saturation potential of Pact-armored vehicles. Fortunately, large quantities are relatively cheap and next generation weapons are more capable.

Nevertheless, despite all the limitations, a recent study estimates that a US division equipped with the planned number of current PGMs and allotted its share of airpower could defeat up to four Pact tank divisions, while destroying 1,000 tanks in only a few days.<sup>16</sup> Further, US divisions have not yet achieved maximum potential PGM density nor have they restructured to focus on the anti-tank problem as the primary mission. Most allied divisions today are even less capable in this role. Thus, full exploitation of PGMs and related technology potential would enhance NATO conventional defense posture at relatively low costs.

#### FORCE STRUCTURE IMPROVEMENTS

Debates over competing force structures and concepts for organizing alliance defense began before the treaty was signed, hence the second alternative solution is not a new approach. Many improved NATO force structure models have been proposed. For example, in 1954, Colonel Bogislaw von Bonin, a staff officer in the emerging West German Army, publicly rejected the NATO mobile strategy of retreat and counterattack. Mobile forces, he argued, would naturally fall back to preserve strength for counterattack after weakening the opponent. In the process, much of West Germany would be destroyed. Instead, he proposed a forward defense along the border conducted solely by a highly trained, professional 150,000-man German Army, heavily armed with anti-tank weapons. An unconditional all-out defense by small powerful anti-tank units in a 50-km-wide zone, backed up by six mobile armored divisions to the rear to seal off breakthroughs, would confine damage to the border areas. Forces of other NATO nations would reinforce this all-German force from their peacetime positions behind the Rhine.<sup>17</sup> Von Bonin's proposal and his career from that point on went nowhere.

In the same year Sir John C. Slessor proposed a somewhat similar two-tiered German force structure. The 12 German divisions then being proposed for NATO would be supplemented by "a highly trained, semi-static Home Guard armed primarily with anti-tank guns and with light automatics as the personal weapon. The Federal Republic . . . should be covered with a network of these units composed of local men knowing every inch of the ground . . . responsible for the defense of their own Kreis and town or village." These forces would lay minefields, execute demolitions, create roadblocks, and attempt to destroy enemy armor in their zones. When unable to offer further effective resistance they would fall back to the next zone. Slessor envisioned these forces slowing and harassing enemy formations, thus allowing the regular army units located in reserve to the rear to conduct mobile warfare against the main threats.<sup>18</sup> Since the Home Guard would be 100 percent reservists, the cost would be minimal while the deterrent and warfighting value would be high, due to density and rapid mobilization capacity.

Variations on the two-tiered theme have continued. Liddell Hart in 1960 argued that an adequate shield for NATO's Central Region would be a combination of 20 regular fully mobile divisions and ten German citizen militia divisions trained for static or locally mobile defense, in prepared defenses near their homes.<sup>19</sup> In the mid 1960's F.O. Miksche recommended a German force structure based on a smaller standing army and relying on mobilization of well-trained reserves as well as defense in depth. Seven mobile divisions would form the strike force behind a territorial force of 6 frontier commands with 72 militia brigades. These forces would be supplemented by internal security battalions and civil defense units. Under war conditions, field army manpower would comprise less than 25 percent of land forces.<sup>20</sup>

In the mid 1970's Guy Brossollett proposed a three-tiered system for defense of the French frontier comprising: 1) a 120-km-wide zone saturated with small, static anti-tank positions backed up by; 2) tank-destroyer units for further attrition of attacking units; and 3) tank regiments for countering major penetrations. Under this concept the attacker would dissipate his resources, coping with a hopeless web of mutually supporting static points until, so weak from attrition, he can be repelled.<sup>21</sup> Brossollett and his strategy suffered a fate similar to von Bonin's.

Kenneth Hunt offers a somewhat more flexible variation of the two-tier scheme in which the strength and active/militia

force mix in a particular sector is determined by the nature of the terrain and likelihood of a major Soviet thrust. Heavy active forces would concentrate on main avenues of advance, while 50 militia battalions and lighter active units aided by terrain and barriers would fill the gaps.<sup>22</sup> If Soviet main attacks can be correctly identified in advance, this approach permits the defender to achieve maximum efficiency in force distribution through classic economy of force techniques. Errors would be costly and difficult to recoup, however.

Finally, one-tiered systems, based almost entirely on territorial forces, have been examined by Adam Roberts, Horst Mendershausen,<sup>23</sup> and others. While pure territorial defense concepts do have validity in certain political and geographic circumstances, they do not solve the strategic requirement for forward defense. NATO can ill afford to hope that potential pain incurred after a successful dash to the channel will be an adequate deterrent in a crisis.

Building on many of these proposals, Malcomb Hoag in 1977 completed a detailed study of the two-tiered or hi-low force structure option. He concluded that attempting to match Soviet forces with similarly structured units (i.e., offensive), when the mission of those units was defense, was economically absurd. Fully-manned, armor-heavy, mobile divisions are both capital and labor-intensive organizations, existing in a market where both are expensive. Hoag therefore examined two options.

In the first, the cost of a single mobile-division slice was diverted to provide "a system of fortified strong points in a checkerboard grid to be manned by nearby German militia in an alert."<sup>24</sup> The saved resources would be sufficient to support 1,260 strong points in a 30-km-deep zone, each manned by 500 militia troops armed with anti-tank and lighter weapons. Infrastructure costs would be minimal compared to mobile units, due to greatly reduced requirements for vehicles, radios, supplies, and heavier weapons and equipment. Also, labor costs would be low since the militia cadre is to be diverted from existing German territorial forces cadre, and fillers are to be provided by a steady stream of conscripts entering the reserves after training. Hoag considers land acquisition and 10-year-total system costs, including 200 TOW missiles per strong point, in making his comparisons. By giving up one heavy mobile division, Hoag argues that the commander would gain the equivalent (measured in days' delay for the Pact) in defensive holding power of five divisions.<sup>25</sup>

As a second option Hoag examined a much more drastic trade-off which yields significantly greater results. By designing area-specialized regular divisions organized, equipped, and trained for the single mission of forward defense, much of the investment in mobility, and consequent support structure found in typical NATO mobile, multipurpose divisions, would not be required. A streamlined, tailored, single-mission division, Hoag argues, can be just as effective for this particular mission as is its multirole counterpart, yet will cost no more than half as much.

Hoag proposes creation of 34 area-specialized divisions. This number will meet current on-line commitments for forward defense at the cost of 17 mobile divisions. If this conversion were made, the remaining 16 mobile divisions ( $M+15$  totals:  $33-17=16$ ) would thus be freed from forward commitments, and would form the maneuver element required for area defense. This area and mission specialization would both increase forward holding strength, and create a large defensive reserve. The current reserve is woefully inadequate, since nearly all mobile divisions are required on line simply to cover the space.<sup>26</sup> An  $M+15$  total of 50 divisions (34 area-specialized plus 16 mobile) would bring NATO much closer to the force ratio required for successful defense.

Consistent with current manpower constraints, the area-specialized division would contain an active/reserve (vice militia) mixture. An active brigade and all divisional equipment would be in place in Germany where it could be quickly brought to full strength by fully trained reservists. The active brigade and active cadre for the reserve brigades would provide a stiffening element absent from the first Hoag option which depends on militia. In both options Hoag argues that increased overall defensive effectiveness can be achieved with fixed resources through mission specialization.

A somewhat different approach seeks increased conventional capability through less drastic force structure modifications. For example, Steve Canby proposes a solution which addresses the tooth-to-tail issue and total land-force size but preserves its homogeneity. He criticizes NATO force structure for its long war orientation, when both the Soviet threat and alliance strategy postulate that a short war is far more likely. He believes that certain structural changes can correct this imbalance. The Soviet model is Canby's reference point although he stops short of complete mirror imaging.

Canby's ideal NATO division would be designed to peak early with maximum combat power and would contain little self-sustaining capability. Support would be provided by external logistics elements, primarily reserves, which would join forward-committed divisions after the battle is underway. Logistics support would be allocated and managed much like artillery support, hence would be more efficient, since redundancy would be eliminated. This in turn would improve tooth-to-tail ratios and would have a cumulative effect throughout the lines of communications and support base. Attrition replacement would be by unit, with forward units being disengaged for replenishment when no longer combat-capable due to losses.<sup>27</sup>

Canby has also proposed adopting the Soviet cadre division model to increase peacetime force structure in the Central Region to 60 fully equipped divisions (all using war stocks) in 3 readiness categories, according to degree of active personnel manning. The NATO defensive concept would also emphasize strong anti-tank defense in larger numbers of smaller units organized into a checkerboard system of strong points. By correct approximate positioning of company-size anti-tank units in depth, Soviet thrusts would be exhausted in a defensive grid, which would bend but not snap. The force is designed to absorb and attrit Soviet armor until it would be countered by reserves.<sup>28</sup> Canby's concept seems similar to the two-tiered systems, but he envisions a more homogeneous force on a much larger scale. Its size means high cost, even if partially reservists, since equipment and infrastructure alone, for 60 mobile divisions, would require drastic increases in Western defense budgets. Accordingly, costs diminish the appeal of Canby's concept.

#### FORTIFICATIONS, BARRIERS, AND OBSTACLES

Prepared fortifications, barriers, and obstacles offer a third alternative means for significantly enhancing NATO conventional defense capabilities. The concept is nearly as old as warfare itself. Successful defenders have always taken advantage of terrain and man-made enhancements thereto, to increase defensive combat power. Fortifications conceal and protect the defender, his supplies, and communications from incoming fire and therefore enable him to place more accurate fire on the attacker. Barriers and obstacles slow the attacker thus increasing his exposure to defender's fire, and hence his casualties. Studies show that slowing an attacker to a third of

his original speed will increase his casualties by 60 percent.<sup>29</sup> Barriers, such as mines, may also inflict casualties. Furthermore, barriers disrupt time schedules, disorganize units, and cause the attacker to mass in kill zones rather than on planned objectives. This thereby nullifies his advantages of speed, initiative, and shock action. In effect, through judicious terrain preparation, the defender can seize the initiative from the attacker.

Current NATO defense plans obviously incorporate prepared defensive positions into strategy, as well as minefields, craters, bridge demolition, and the like. Since none of these are in place, however, the wartime extent of such preparations is entirely a function of warning time, political decision time, quantity and location of prestocked barrier materials, and the amount of engineer support available. In all but a very long warning scenario coupled with rapid political decisions, no field commander will get adequate time or support for full execution of his defensive-position preparations or barrier plan. Fifteen days' time is considered necessary for the hasty defense (which increases the defender's combat power by a factor of roughly 1.25,<sup>30</sup> yet many threat assessments postulate that M+15 is precisely the time of greatest Pact advantage, relative to NATO. If defensive forces are already dangerously inferior relative to the opponent, it seems the height of folly to gamble on long warning, particularly when many barriers (excluding mines), obstacles, and even defensive works can be prepared in peacetime without undue interference with civil pursuits.

The standard argument used against extensive peacetime preparation of fortifications and barriers is a misinterpretation of the fall of the Maginot Line in 1940. Contrary to popular myth, however, the Maginot Line was never tested by frontal assault. In fact it was simply out-flanked through Luxembourg and Belgium, and ultimately fell without a fight as France was occupied to its rear. This probably could have been prevented had France properly used her superior armored strength to counter the German flanking thrust.

A second argument is that West Germany cannot accept peacetime fortifications because they would signal permanent acceptance of a divided Germany.<sup>31</sup> Ironically, West Germany is the originator of the forward defense concept, yet is seen as unwilling to authorize the very measures necessary to make it work. It would seem, however, that the Helsinki accords have already codified the division of Europe. In any case, in view of the strategic imperatives cited previously, German objections could probably be overcome.

A third argument is that any peacetime barrier preparation would be threatening to the other side. This is specious logic since the Pact long ago erected fences, minefields, and defensive works. More importantly, terrain enhancement is defensive by definition and therefore is inherently stabilizing, and could be threatening only to a potential attacker.

A number of critics of NATO strategy have proposed increased reliance on prepared defenses. Two decades ago, Miksche argued that 50-60 simply equipped infantry divisions in prepared fortifications, with abundant anti-tank weapons, and backed by 3 reserve armored corps held in reserve, offered the cheapest, yet most effective, solution to the problem. Prepared defenses would create the most convincing deterrent and would be the most flexible posture for either conventional or nuclear conflicts. He asserted that an impressive barrier system could be constructed for the price of two armored divisions, and subsequent maintenance would cost about the same as personnel and training for three mechanized divisions. Compared to alternative conventional defense concepts, based on mobile warfare, Miksche found this exceedingly cheap.<sup>32</sup>

More recently, Tillson proposes a defensive zone in a 40 km band extending along the border from the North Sea to Austria. Extensive landscaping to hinder cross-country movement "would include forestation, walled terracing, construction of recreation and irrigation lakes and ditches and hedgerow planting." Additionally, "normal work on roads, railroads, and canals in the defensive zone would contribute to hindering enemy movement."<sup>33</sup> Prechambered demolition sites would be constructed throughout the zone, as well, thus simplifying wartime-obstacle-plan execution.

Tillson also advocates peacetime construction of fortified defensive positions and observation posts, from which all barriers and obstacles could be covered by fire. These precast, reinforced concrete positions would have greatly enhanced survivability relative to hasty defenses. Prepared positions would be located throughout the zone, in size and depth appropriate to the likely Pact threat in each sector.<sup>34</sup>

Tillson estimates that although the zone is 40 km wide, only small sectors of this land area would actually be affected by construction. He calculates this would be about .12 percent of the zone and .02 percent of the FRG. Total cost for barrier and position construction is estimated at only \$3 billion.<sup>35</sup>

Hoag also argues in favor of prepared defenses. His system consists of multiple division-sized positions in a zone 5-15 miles in depth. He estimates that a fortified barrier system of this type will have at least a multiplier effect of 1.5 for on-line divisions. In Hoag's example, this is the equivalent of a defensive force of 17 additional area-specialized divisions which would cost nearly \$60 billion. But the 10-year-system cost of the fortifications and barriers producing the same effect is calculated at only \$7 billion.<sup>36</sup>

Even allowing for large error, the potential cost effectiveness of fortification is obvious. In either costing example, the payoff from prepared positions is orders of magnitude greater than that of simply buying more units. With such increased warfighting and deterrent value, for so little relative cost, it is difficult to understand why this relatively benign area has not been exploited.

#### DEFENSIVE USE OF URBAN AREAS

Often slighted in discussions of NATO defensive zones is the defensive potential of urban areas. Military men tend to ignore it since mobile warfare doctrine envisions bypassing built-up areas while civilians, particularly politicians, do not want to face the difficult decisions deliberate city defense entails.<sup>37</sup> Nevertheless, urbanization in Europe has already brought into doubt many of the military and political concepts behind both NATO and Pact strategy. West European terrain is now dominated by cities. Not only must the large urban populations be taken into account, but also the density and proximity of small villages, the location of built-up areas relative to forests and rivers, and the defensive potential of urban terrain—if it is properly incorporated into a broader plan.

A typical defensive position for a NATO armored brigade on the East German border contains about eighty-five villages and has defensive frontage of some twenty-five kilometers. The villages and forests would comprise nearly 60 percent of the available terrain and—because of their spatial distributions and the domination of roads and open avenues of approach through the sector--the W.P. forces' attacking tanks would be unable to bypass one village

without running into another. Nevertheless, official thinking on this subject seems implicitly to accept the proposition that attacking units would bypass all villages and towns.<sup>38</sup>

The Soviets, however, simply cannot bypass cities entirely, since important road nets required by their road-bound logistics units invariably converge in urban areas. To go through these cities, the Soviets must spend the time and resources to seize them. Furthermore, attempted bypassing will cause canalization into potential kill zones between cities covered by PGMs and mines. To avoid concentration on this costly route, urban areas must also be attacked. But urban terrain favors the defender and dramatically reduces the effectiveness of massed armor. Thus, if NATO forces defend both urban terrain and the gaps in between, the Soviet planners face a real dilemma. For speed, their combat forces must bypass cities, yet those same forces must at the same time slow down to clear routes for their own support. The compounding impact on Soviet strategy of these delays was cited earlier.

In conjunction with defensive works covering the gaps between cities and towns near the border, defense of urban areas offers great potential payoffs to NATO.

If NATO were to exploit the conventional defense potential of cities it would in effect create a super Maginot Line, echeloned in depth across Western Europe, which would constitute the largest man-made military fortification in history. As with all schemes of fortified defense, large mobile reserves would be essential, in addition to the use of the suburban and urban zones of Europe as a gigantic antitank barrier.<sup>39</sup>

#### CORRECTING THE MISMATCH

"The best defense is a good defense,"<sup>40</sup> and a good defense is also the best deterrent. A good conventional defense in the Central Region must satisfy NATO's strategic imperatives and be credible to Soviet military planners, yet be affordable and politically acceptable to alliance members. More specifically: only a true forward defense in a narrow zone

along the Iron Curtain is acceptable; its cost cannot exceed current defense expenditure levels by a wide margin; all alliance members' participation should remain roughly proportional to current contributions; and the defense must be designed specifically to defeat the Soviet tank threat.

The foregoing proposals were all attempting to satisfy these criteria to some degree. While the analysts agree on the problem and show some overlap in elements of their solutions, there is no overall consensus on what is necessary or enough. The four improvement areas examined offer significant promise individually, yet their potential interrelationships are obvious. A combination of their individual advantages should well exceed the sum of their parts. Given current inadequacies, our resource limitations, and the magnitude of the threat, a truly effective conventional forward defense must exploit the strengths of the entire spectrum of potential solutions in a comprehensive and coherent package. Such a package is achievable if politicians and military planners are willing to adapt to significant changes in our current posture.

Achieving an affordable conventional force capable of successfully conducting NATO's forward defense strategy will require the following adjustments to that posture:

- o Major increases in PGM-densities beyond those currently envisioned in NATO force plans.
- o Creation of large numbers of PGM-armed anti-tank units--both air and ground.
- o Focusing the training and principal combat mission of all combat elements, air and ground, on destruction of Warsaw Pact tanks.
- o Adoption of a true forward defense tactical concept in a defensive zone 30-50 km wide along the border.
- o Extensive peacetime preparation of successive defensive positions, barriers and obstacles within the defensive zone in a web of mutually interlocking and supporting positions.
- o Incorporation of all built-up areas within the zone into defensive plans.
- o Development by all nations currently on-line in the Central Region (NL, BE, UK, US, GE) of specialized

units for the forward defensive role within their respective sectors. These units would of necessity be organized and equipped along similar lines. Thirty to 34 divisions of this type are required.

- o Maintenance of 14 to 16 heavy mobile divisions armed and equipped for heavy counterattack and tank killer central reserve role.
- o Adoption of cadre/reservist division structures for both type divisions in which larger force structure can be maintained at approximately current active-duty manpower levels.

These elements of a successful forward defense concept address, in some degree, the two core problems facing military planners: inadequate force size and the need for a dramatic increase in tank-killing capacity. Simply expanding the current NATO force structure with the previously cited dozen mobile divisions required would solve the first problem and contribute much toward resolving the second. While appealing to military planners, that number of heavy divisions is unfortunately far too costly, therefore, realistic solutions must be found elsewhere.

Purely militia forces, while they could satisfy the force size requirement, would not be successful on two grounds. First, they would necessarily be solely German, while internal alliance solidarity, as well as maintenance of a common front, requires integrated forward deployed forces. Secondly, a militia force would not be a credible obstacle to rapid Pact advances. Militia has no peacetime visibility, nor any premobilization combat capability. And upon mobilization, militia forces would have questionable standing power against a Pact juggernaut, regardless of their individual courage. Militia forces can, however, play a major role in securing rear areas and in assisting the defense against secondary threats. Beyond that, territorial forces appear inappropriate for the Central Region problem.

This is not the case, however, with respect to regular divisions structured specifically for area defense. A high-low force mix along the lines suggested by Hoag will satisfy the expanded force structure need within cost and manpower constraints. At the low end, 30-34 area-specialized divisions would provide, for the first time in NATO's history, a force which can physically cover the intra-German/ Czechoslovakian border, while freeing sufficient (14-16) mobile divisions for the

reserve role. Area-specialized divisions, with at least one active brigade and cadre for the remainder, would physically occupy the forward defensive terrain in current national corps sectors, where they could be rapidly brought to full strength by reservists from respective countries who received training in the same units and on the same terrain. Ideally these national units would have similar organizations. Units so structured would have both peacetime presence and credibility, as well as wartime staying power.

Likewise at the high end of the mix the mobile divisions might not necessarily be maintained at full war strength. While equipment complexity, training, and maintenance would probably require higher manning levels, substantial reliance on reservists, perhaps up to a third of strength, is possible. Wartime force structure expansion, as currently envisioned in the West German Model 4 for armored and mechanized divisions, is instructive.<sup>41</sup>

Both elements of the high-low mix should incorporate maximum supportable PGM densities in order to saturate the battlefield with tank killers. Each infantry squad (mobile or otherwise and sized as low as five men) should be capable of sustained anti-tank fire and multiple tank kills. Densities must be such that threatened on-line units can be rapidly reinforced with sufficient ground mobile (primarily tanks), air mobile (light systems), helicopter delivered, air force delivered, and indirect fire weapons (PGMs and mines) to service every attacking Pact tank in sector. Current weapon and command control systems are capable of satisfying this need, provided the munitions are bought in the necessary quantities. The PGM-to-tank cost/benefit ratio is so high that the case for increased stockpiling makes itself.

For most efficient PGM allocation or reinforcement, additional specialized PGM delivery units are required. These units would be used by corps or higher commanders to begin tank attrition as part of screening forces along main avenues of approach. Later, when the main battle is joined, these units would provide the reserve reinforcing element needed to influence the battle in critical sectors. Air units would include both army and air force aircraft, while ground units would include direct fire systems (tanks, TOW, etc.), and indirect (Copperhead, MRLs, etc.), and could also include specialized ammunition delivery units.

Killing tanks would be the primary mission of all ground and close air support forces. Since the Soviet/Pact threat is a

tank threat it can be eliminated only if tank numbers are drastically reduced. The PGM densities and organizational changes envisioned will make this feasible.

Just as important as the preceding improvements is the requirement for peacetime preparation for actually fighting along the border, including in urban areas. The construction costs are manageable, particularly in comparison with alternatives. More importantly, defensive preparations would send a clear signal to the Soviets that NATO means business, and that it can and will execute its stated strategy.

No easy or quick victory would be perceived as likely if Soviet planners faced the 44 to 50 NATO divisions envisioned in a fully prepared 30-50-km-deep zone along the border. The barriers and obstacles would, as advertized, slow and disorganize any attack, thus increasing tank losses. Fortifications and defensive integration of urban areas would greatly complicate the attack problem and would raise anticipated losses. The desired momentum and speed of advance would be much more difficult to maintain even if breakthroughs were achieved. Finally, if NATO possessed large reserves with a true ability to mass PGM fire on breakthrough tanks, the entire attack might grind to a halt while grappling with the problem of penetrating the zone.

Faced with greatly increased uncertainty about the likely outcome of a conventional gamble, the prudent Soviet would not leave his cantonment area. Thus, real but affordable conventional warfighting capability would correct the strategy/force mismatch, and buy true deterrence.

## ENDNOTES

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